

MARY D. LEMCKE

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Education

- 2007 **DOCTOR OF PHILOSOPHY**, Climatology
University of Delaware, Newark, Delaware
Thesis: *Evaluation of the Antarctic Sea Ice Thickness Distribution
Produced by the Community Sea Ice Model (CSIM5)*
Faculty Advisors: Tracy DeLiberty, PhD and Brian Hanson, PhD
- 2002 **MASTER OF SCIENCE**, Geography
University of Delaware, Newark, Delaware
Thesis: *The Origin and Paleoclimatic Significance of
Sediment-Filled Wedges in Northern Delaware*
Faculty Advisor: Frederick E. Nelson, PhD
- 1998 **BACHELOR OF ARTS** with Honors, Geological Sciences
Albion College, Albion, Michigan
Thesis: *A Geographic Information Systems Analysis of
Vertebrate Diversity with Respect to Climate and its
Applications to Paleoclimatology*
Faculty Advisor: William Bartels, PhD

Awards & Grants

COMPETITIVE FELLOWSHIPS

- 2005-2006 University Competitive Graduate Fellowship Recipient
2003-2005 NASA Delaware Space Grant Fellowship Recipient

TRAVEL GRANTS

- Graduate Student Travel Award
Department of Geography Travel Grant
Office of Women's Studies Travel Grant

Academic Positions

INSTRUCTOR

Geological Hazards Laboratory (Geol115L)
Department of Geological Sciences
University of Delaware, Winter 2007

Climate & Life (Geog152)
Department of Geography, University of Delaware
Summer & Fall 2000, Winter 2004, 2005

Physical Geography: Climatic Processes (Geog101)
Department of Geography, University of Delaware
Winter 2000

TEACHING ASSISTANT

Department of Geography, University of Delaware
Fall 1998 – Spring 2002, Fall 2006 – Spring 2007

LABORATORY ASSISTANT

Department of Geological Sciences, Albion College
Fall 1996 – Spring 1998

Research Positions

RESEARCH ASSISTANT

Investigation of Interannual Sea Ice Thickness Variability
in the Southern Ocean (NSF Grant # OPP-0088040)
Supervisor: Dr. Tracy L. DeLiberty
Department of Geography, University of Delaware
September 2002 – August 2003

STUDENT ASSISTANT

Ground-Water Recharge Potential Mapping (Delaware
Geological Survey Report of Investigations No. 66).
Supervisors: A.S. Andres & C. Scott Howard
Delaware Geological Survey
May 1999 – August 1999

Publications

REFEREED PUBLICATIONS

Lemcke, M.D. and Nelson, F.E. (2004). Cryogenic sediment-filled wedges, Northern Delaware, USA, *Permafrost and Periglacial Processes*, 15: 319-326.

CONFERENCE PROCEEDINGS

DeLiberty, T. A., Geiger, C. A. and **Lemcke, M. D.** (2004), Quantifying sea ice in the Southern Ocean using ArcGIS, *Proceedings of the ESRI International User Conference, San Diego, CA, August 9-13.*

Lemcke, M.D. and Nelson, F.E. (2003). Periglacial Sediment-Filled Wedges, Northern Delaware, USA, *Periglacial Features of Southern New Jersey: Geological Association of New Jersey 20th Annual Meeting, Field Guide and Proceedings*, 93-99.

MANUSCRIPTS IN PREPARATION

Lemcke, M.D. (to be submitted to *Physical Geography*) Evaluating the utility of in situ and remotely-sensed Antarctic sea-ice observations for use in model evaluation.

Lemcke, M.D. (to be submitted to *International Journal of Climatology*) Sub-grid-scale variability associated with gridded in situ and remotely-sensed sea-ice thickness observations.

Lemcke, M.D. (to be submitted to *Journal of Geophysical Research*) Evaluating the performance of coupled and uncoupled sea-ice models using remotely-sensed sea-ice observations.

Presentations

2007

Lemcke, M.D., "Evaluating the utility of remotely-sensed sea-ice thickness information for use in model validation studies," March 2007, Association of American Geographers Annual Meeting, San Francisco, CA. (accepted)

2006

Lemcke, M.D., "Evaluating sea-ice model performance using in situ and remotely-sensed information on Antarctic sea-ice thickness," December 2006, The American Geophysical Union Fall Meeting, San Francisco, CA.

Lemcke, M.D., "The Extent of Periglacial Conditions within the Mid-Atlantic Region during the Last Ice Age," June 2006, 63rd Eastern Snow Conference, Newark, Delaware.

Lemcke, M.D., “Validating a simulated Antarctic sea ice thickness distribution using satellite-derived sea-ice thickness observations,” March 2006, Association of American Geographers Annual Meeting, Chicago, IL.

2005

Lemcke, M.D., “Evaluating sub-grid-scale variability in gridded sea-ice thickness observations,” December 2005, The American Geophysical Union Fall Meeting, San Francisco, CA.

Lemcke, M.D., “A new source of sea-ice information for climate modeling studies,” April 2005, Association of American Geographers Annual Meeting, Denver, CO.

Demitroff, M. and **M.D. Lemcke**, “Late-Pleistocene Thermokarst in the Pinelands of Southern New Jersey,” April 2005, Association of American Geographers Annual Meeting, Denver, CO.

2004 and earlier

Lemcke, M.D., T.L. DeLiberty, C.A. Geiger, M. Van Woert, A.P. Worby, and S.F. Ackley, “A seasonal and interannual investigation of the sea-ice thickness distribution in the Ross Sea,” March 2004, Association of American Geographers Centennial Meeting, Philadelphia, PA.

Lemcke, M.D. and F.E. Nelson, “Periglacial sediment-filled wedges, northern Delaware, USA,” October 2003, Geological Association of New Jersey 20th Annual Meeting, Richard Stockton College, NJ.

Lemcke, M.D. and F.E. Nelson, “Cold-Climature Origin of Sediment-Filled Wedges, Northern Delaware, USA,” March 2003, Association of American Geographers Annual Meeting, New Orleans, LA.

Computer Skills

OPERATING SYSTEMS	Unix, Linux, DOS, Windows, MacOS
SOFTWARE PACKAGES	MS Office, ESRI ArcGIS, Adobe, SPSS, Maple, Golden
PROGRAMMING LANGUAGES	Fortran, NCAR Command Language (NCL), Python (proficient) C, Make, HTML (familiar)

Service & Professional Affiliations

- EXTERNAL** Session Chair & Co-Organizer
Antarctic Climate and Cryospheric Studies (April 2007)
Association of American Geographers Annual Meeting
San Francisco, California
- Guest Speaker (July 2006)
Urban Environmental Center, Wilmington, Delaware
- Session Chair - Arctic Glaciers and Sea Ice (March 2006)
Association of American Geographers Annual Meeting, Chicago, Illinois
- Delaware Science Olympiad Tournament (March 2005)
High School Remote Sensing Competition
Delaware State University, Dover, Delaware
- INTERNAL** Team Captain, Department of Geography softball team (2006)
Graduate Student Representative to the Faculty (2003 - 2004)
- MANUSCRIPT REVIEWER** *Journal of Quaternary Science*
Computers & Geosciences
- PROFESSIONAL ORGANIZATIONS** Association of American Geographers
American Meteorological Society
American Geophysical Union
Sigma Xi, Research Honorary Society